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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/917,087

07/27/2001

Robert J. von Gutfeld

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EXAMINER

LANDAU, MATTHEW C

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,087

Applicant(s)

GUTFELD ET AL.

Examiner

Matthew Landau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 12-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 12-24 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group II in Paper No. 5 is acknowledged. Since Applicant's amendments have nullified the restriction requirement, all currently presented claims will be examined.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the steps of: applying a non-epoxy glue sealant along an outer periphery of a first substrate, irradiating the sealant with laser radiation that subtends an angle near normal (as well as non-normal), applying the glue sealant with the ODF method, irradiating with a laser controlled by a servo to trace out the pattern of the sealant, and directing the laser beam with scanning mirrors must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 3, 12, 17, and 20 are objected to because of the following informalities:

In regards to claim 3, it is suggested the limitation "onto one of first or the second substrate" be changed to read "onto one of the first or the second substrate".

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In regards to claim 12, it is suggested the limitation “according to an ODF (One Drop Fill)” be changed to read “according to an ODF (On Drop Fill) method”. Also, the limitation “an ODF method” in the second paragraph should be changed to read “the [an] ODF method”. Appropriate correction is required.

In regards to claim 17, it is suggested the limitation “from the laser” be removed since it does not appear to add anything to the claim. Furthermore, the limitation “the backside of panel” should be changed to “the backside of the panel”.

In regards to claim 20, there is an extra comma in the beginning of the claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 8, 12, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claim 3, the limitation “near normal” renders the claim indefinite. It is unclear what range of angles is encompassed by this limitation. The specification does not provide the examiner with any guidance in determining the meets and bounds of this limitation. It cannot be determined how close to normal an angle must be to read on the claim. Furthermore, it is unclear is a normal angle is “near normal”. It is considered that a normal angle is encompassed by the limitation “near normal”.

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In regards to claim 8, it is unclear if the claimed laser is pulsed or continuous wave. Claim 5, from which claim 8 depends, recites a pulsed laser. It is unclear how a laser can be both pulsed and continuous. It is considered for the purposes of this Office Action that claim 8 depends from claim 6.

In regards to claim 12, the limitation “wherein the non-epoxy glue sealant is applied using an ODF method” renders the claim indefinite. According to Applicant’s specification (page 2, paragraph 1) the ODF method refers to the manner in which the liquid crystal is deposited. It is unclear how the non-epoxy glue sealant can be applied using an ODF method. It cannot be determined what Applicant intends to claim with this limitation.

In regards to claim 18, the limitation “Q-Peak” renders the claim indefinite. According to the specification, the term “Q-Peak” is a trademark (see page 7, line 24). If a trademark is used in a claim as a limitation to identify a particular product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph (see MPEP 2173.05(u)).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Inou.

In regards to claim 1, Figures 1(b)-6 disclose a method for affixing two substrates using a non-epoxy glue sealant containing photoinitiators, the method comprising the steps of: applying a non-epoxy glue sealant 8 (column 5, lines 58-61) along an outer periphery of a first substrate 5; placing a second substrate 4 onto the first substrate containing the non-epoxy glue sealant; and irradiating the glue sealant with laser beam radiation 12 to polymerize the sealant (column 6, lines 27-30) by directing light onto the first substrate that is at least partially transparent to the laser beam.

In regards to claim 2, Inou discloses the step of irradiating the glue sealant 8 includes irradiating the glue sealant with laser beam radiation to polymerize the sealant by activating the photoinitiators (column 6, lines 27-30). It is inherent that a sealant which undergoes photopolymerization when exposed laser radiation comprises at least some type of photoinitiator, and that this photoinitiator is activated when exposed to the radiation.

In regards to claim 3, Figure 1b of Inou discloses the step of irradiating the glue sealant 8 includes irradiating the glue sealant with laser beam radiation 12 that is incident onto the first substrate 5, so that the laser beam radiation subtends an angle near normal to the first substrate receiving the laser beam irradiation, the beam irradiation passing through the first or the second substrate onto the non-epoxy glue sealant.

In regards to claim 5, Inou discloses the step of irradiating the glue sealant 8 includes irradiating the glue sealant with laser beam irradiation from a pulsed laser (column 6, lines 40-43).

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In regards to claim 7, Inou discloses the step of irradiating the glue sealant includes irradiating the glue sealant with laser beam irradiation from a pulsed laser with a wavelength of 351nm (column 6, line 11), which is within the claimed range.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. (US Pat. 6,222,603, hereinafter Sakai) in view of Chern et al. (US Pat. 4,401,537, hereinafter Chern).

In regards to claim 1, Figures 5 and 6 of Sakai disclose a method for affixing two substrates using a non-epoxy glue sealant containing photoinitiators, the method comprising the steps of: applying a glue sealant 6 along an outer periphery of a first substrate 2a; placing a second substrate 2b onto the first substrate containing the glue sealant; and irradiating the glue sealant with laser beam radiation to polymerize the sealant (column 6, lines 33-37) by directing light onto the first substrate that is at least partially transparent to the laser beam. The difference between Sakai and the claimed invention is the use of a non-epoxy sealant. Chern discloses using photopolymerized epoxy-containing materials to seal liquid crystal substrates (column 2, lines 38-49). Since the epoxy-containing materials of Chern are not pure epoxy's, they can be considered non-

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epoxy sealants. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Sakai by using a non-epoxy sealant for the purpose of obtaining a seal with excellent resistance to liquid crystal materials and low moisture permeability (column 6, lines 50-52).

In regards to claim 2, Sakai discloses the step of irradiating the glue sealant 8 includes irradiating the glue sealant with laser beam radiation to polymerize the sealant by activating the photoinitiators (column 6, lines 33-37). It is inherent that a sealant, which undergoes photopolymerization when exposed laser radiation, comprises at least some type of photoinitiator, and that this photoinitiator is activated when exposed to the radiation.

Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inou in view of Volkmann et al. (US Pat. 4,931,125, hereinafter Volkmann).

The difference between Inou and the claimed invention is the laser is a continuous wave (CW) laser. Figure 1 of Volkmann discloses a CW laser 10 (column 11, lines 28-30) to cure an adhesive bonding two substrates. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Inou by using a CW laser for the purpose of simplifying the laser controls.

Claims 12, 15, 16, 17, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inou in view of Ishihara et al. (US Pat. 5,263,888, hereinafter Ishihara).

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In regards to claim 12, Figures 1(b)-6 of Inou disclose the first substrate 5 and the second substrate 4 form a LCD panel and the irradiating of the non-epoxy glue sealant with the laser beam 12 includes providing a UV dosage into the non-epoxy glue sealant within the LCD panel of 0.06 J/cm^2 (column 6, lines 10-12). As best the examiner can ascertain the claimed invention, the difference between Inou and the claimed invention is the LCD panel assembled according to an ODF (One Drop Fill) method. Figure 2 Ishihara disclose an LCD panel assembled according to an ODF method. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Inou by using the ODF method of Ishihara for the purpose selecting a method capable of quickly filling the cavity with the desired amount of liquid crystal.

In regards to claim 15, it is inherent in the method of Inou that the step of irradiating the non-epoxy glue sealant with a laser includes irradiating with a laser to expose photo initiators in the non-epoxy glue sealant to take less time to cure than a thermal bake of the non-epoxy glue sealant using thermal initiators.

In regards to claim 16, it is inherent in the method of Inou that the step of irradiating the non-epoxy glue sealant with a laser includes irradiating with a laser to expose photo initiators in the non-epoxy glue sealant. The intended use limitation beginning "so as to minimize heat build up..." does not patentably distinguish the claimed invention over Inou.

In regards to claim 17, it is inherent in the method of Inou that the step of irradiating the non-epoxy glue sealant with a laser includes irradiating with a laser to expose photo initiators in the non-epoxy glue sealant. Figure 1(b) of Inou discloses the

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laser is irradiated on the backside of the LCD panel, wherein the backside of the panel contains no blocking images.

In regards to claim 21, Inou discloses irradiating with laser at a wavelength of 351 nm, which is within the claimed range.

Claims 13, 18, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inou in view of Ishihara as applied to claim 12 above, and further in view of Volkmann.

In regards to claim 13 and 22, a further difference between Inou and the claimed invention is the use of a CW laser. Figure 1 of Volkmann discloses a CW laser 10 (column 11, lines 28-30) to cure an adhesive bonding two substrates. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Inou by using a CW laser for the purpose of simplifying the laser controls.

In regards to claim 18, a further difference between Inou and the claimed invention is the use of a Q-switched laser. Figure 1 of Volkmann discloses a Q-switched laser (column 3, line 36) to cure an adhesive bonding two substrates. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Inou by incorporating a q-switch for the purpose of using a well-known means to precisely control the pulse duration.

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Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inou in view of Ishihara as applied to claim 12 above, and further in view of Tsubota et al. (US Pat. 5,677,749, hereinafter Tsubota).

A further difference between Inou and the claimed invention is using an epoxy-acrylate glue sealant. Tsubota discloses using an epoxy-acrylate sealant in a method of making an LCD panel (column 8, lines 8-14). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Inou by using the epoxy-acrylate sealant of Tsubota for the purpose of selecting a material with good adhesive properties that is well known in the art and readily available.

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 14, 23, and 24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (703) 305-4396.

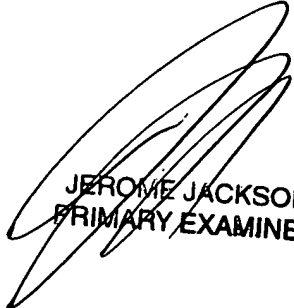
The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Matthew C. Landau

Examiner

December 11, 2003



JEROME JACKSON
PRIMARY EXAMINER